

**REMARKS**

Applicants thank the Examiner for the thorough consideration given the present application. Claims 8, 13-15, 18-20, 23, 24, and 32-34 are pending. Claims 1, 6, 7, and 25-31 are cancelled herein without prejudice to or disclaimer of the subject matter contained therein. Claims 2-5, 9-12, 16, 17, 21, and 22 were previously cancelled. Claims 8, 15, 20, and 32-34 are amended. Claims 8, 15, and 20 are independent. The Examiner is respectfully requested to reconsider the rejections in the Office Action in view of the amendments and remarks set forth herein.

**Reasons for Entry of Amendments**

At the outset, it is respectfully requested that this Amendment be entered into the Official File in view of the fact that the amendments to the claims automatically place the application in condition for allowance.

In the alternative, if the Examiner does not agree that this application is in condition for allowance, it is respectfully requested that this Amendment be entered for the purpose of appeal. This amendment reduces the issues on appeal by canceling claims 1, 6, 7, and 25-31. This Amendment was not presented at an earlier date in view of the fact that the Examiner has just now presented new grounds for rejection in this Final Office Action.

**Rejections Under 35 U.S.C. § 112, first and second paragraphs**

Claims 15, 18-20, 23-25, 27, 29, and 31 stand rejected under 35 U.S.C. § 112, first paragraph. Claims 15, 18-20, 23-25, 27-29, 31, and 32 stand rejected under 35 U.S.C. § 112, second paragraph. These rejections are respectfully traversed.

The Examiner asserts that “less than 2%” in claim 15, and “less than 1%” in claim 20 are not described in the specification. FIGS. 3 and 4, as originally filed, clearly show Mo content (Example 1) being “less than 2%” and “less than 1%”, respectfully. Thus the Applicants respectfully submit that the drawings accompanying the application as originally filed do in fact provide support for the subject matter set forth in claims 15 and 20 as filed on February 14, 2005.

Nonetheless, while not conceding the appropriateness of the Examiner’s rejection, but merely to advance the prosecution of the present application,

claim 15 is amended to recite, *inter alia*, “said Mo in the ferritic stainless steel limiting oxidation to about 0.57 wt%...”, and

claim 20 is amended to recite, *inter alia*, “said Mo in the ferritic stainless steel limiting oxidation to about 0.48 wt%...”.

In addition claim 28 has been cancelled

Applicants respectfully submit that the claims, as amended, are fully supported by and adequately described in the written description of the invention, and properly address each of the issues pointed out by the Examiner. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, first and second paragraphs are respectfully requested.

**Rejection Under 35 U.S.C. §103(a)**

Claims 1, 6-8, 13-15, 18-20, 23, and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Whittenberger et al (U.S. 5,651,906) in view of Miyazaki et al. (U.S. 5,792,285), Uematsu et al. (U.S. 5,302,214), Arai et al. (U.S. 5,151,254), either Bullock et al.

(U.S. 4,810,588) or Hitachi et al. (U.S. 5,177,960), and either or Toyoda et al. (U.S. 5,336,472) or Maus (U.S. 4,713,361).

Claims 1, 6-8, 13-15, 18-20, 23, and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Honma (U.S. 5,323,608) in view of Miyazaki et al. (U.S. 5,792,285), Uematsu et al. (U.S. 5,302,214), Arai et al. (U.S. 5,151,254), either Bullock et al. (U.S. 4,810,588) or Hitachi et al. (U.S. 5,177,960), and either or Toyoda et al. (U.S. 5,336,472) or Maus (U.S. 4,713,361).

These rejections are respectfully traversed.

**Independent Claim 1 Cancelled**

As noted above, claims 1, 6, 7, and 25-31 are cancelled herein without prejudice to or disclaimer of the subject matter contained therein.

**Amendments to Independent Claim 8**

While not conceding the appropriateness of the rejections, but merely to advance the prosecution of the present application, independent claim 8 is amended herein to recite combinations of elements directed to a metal carrier for a catalyst, including:

an oxidation resistant case covering an outer surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel including Mo and phosphorous in order to provide oxidation resistance to the case at a temperature of 800°C or higher, said Mo content in the ferritic stainless steel being 1.20 wt%, and said phosphorous content in the ferritic stainless steel being 0.03 wt%.

Support for the above features can be found, for example, in Table 1 on page 4, FIG.

4, and on page 5, lines 9-15 of the specification. As shown by the Examples 1-3 in Table 1 of the present application, the combination of the Mo content being 1.20 wt%, and said phosphorous being 0.03 wt% was shown by the present inventors to achieve unexpected results as compared to the results achieved in the conventional art.

While the newly cited reference, Miyazaki et al. discloses a phosphorous content in the range of 0.025 to 0.10 wt %, and various individual Mo contents (.51, 1.12, 2.03 for example), Miyazaki et al. fail to disclose a range of Mo content including 1.20 wt% as presently claimed, and fail to disclose the combination of Mo content being 1.20 wt%, along with phosphorous being 0.03 wt %, as presently claimed. Further, newly cited reference Uematsu et al. (Table 1) fails to disclose phosphorous of 0.03 wt%, and thus fails to disclose the combination of Mo content being 1.20 wt%, along with phosphorous being 0.03 wt %, as presently claimed.

Moreover, the Examiner has not established a *prima facie* case that one skilled in the art at the time the invention was made would find it obvious to combine the eight disparate references cited by the Examiner to teach the present invention as set forth in claim 8.

At least for the reasons above, the Applicants respectfully submit that no combination of the references cited by the Examiner teaches or suggests the novel combination of elements set forth in claim 8, including Whittenberger et al., Honma, Miyazaki et al., Uematsu et al., Arai et al., Bullock et al., Hitachi et al., Toyoda et al., and Maus.

Therefore independent claim 8 is in condition for allowance.

**Amendments to Independent Claim 15**

In addition, independent claim 15 is amended herein to recite combinations of elements directed to a metal carrier for a catalyst, including:

an oxidation resistant case covering an outer peripheral surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel including Mo and phosphorous in order to provide oxidation resistance to the case at a temperature of 900°C or higher, said Mo content in the ferritic stainless steel being in a range of 0.30 wt % to 2.50 wt%% and said phosphorous content in the ferritic stainless steel being 0.03 wt%, said Mo and phosphorous in the ferritic stainless steel limiting oxidation to about 0.57 wt% after of the oxidation resistant case is subjected to a temperature of 1000°C for 20 hours.

Support for the novel attributes and characteristics of the oxidation resistant case, as set forth in claim 15 as amended herein, can be found on page 4, line 20 to page 5, line 4 of the specification. See also FIG. 3.

Each of the references cited by the Examiner is silent about an oxidation resistant case covering an outer peripheral surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel including Mo and phosphorous in order to provide oxidation resistance to the case at a temperature of 900°C or higher, said Mo content in the ferritic stainless steel being in a range of 0.30 wt % to 2.50 wt% and said phosphorous content in the ferritic stainless steel being 0.03 wt%, said Mo in the ferritic stainless steel limiting oxidation to about 0.57 wt% after of the oxidation resistant case is subjected to a temperature of 1000°C for 20 hours.

In page 7 and 8 of the Office Action, the Examiner incorrectly states that "...newly added limitations regarding the heating temperature, time, moisture added atmosphere and oxidation increase as set forth in claims 15, 20, 25-27, 29, and 31 are directed to method of making which is of no patentable (weight) in apparatus claim since (it) has been held that the method of forming the device is not germane to the issue of patentability of the device itself". In response, the Applicants submit that the limitations referred to by the Examiner have nothing to do with a method of making the metal carrier of the present invention.

Instead, the Applicants respectfully submit that these limitations of claim 15 describe the attributes and characteristics of the claimed oxidation resistant case, and therefore should be given patentable weight.

Moreover, the Examiner has not established a *prima facie* case that one skilled in the art at the time the invention was made would find it obvious to combine the eight disparate references cited by the Examiner to teach the present invention as set forth in claim 15.

At least for the reasons above, the Applicants respectfully submit that no combination of the references cited by the Examiner teaches or suggests the novel combination of elements set forth in claim 15, including Whittenberger et al., Honma, Miyazaki et al., Uematsu et al., Arai et al., Bullock et al., Hitachi et al., Toyoda et al., and Maus.

Therefore, independent claim 15 is in condition for allowance.

**Amendments to Independent Claim 20**

Further, independent claim 20 is amended herein to recite combinations of elements directed to a metal carrier for a catalyst, including:

an oxidation resistant case covering an outer surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel including Mo and phosphorous in order to provide oxidation resistance to the case at a temperature of 800°C or higher, said Mo content in the ferritic stainless steel is 1.20 wt% and said phosphorous content in the ferritic stainless steel being 0.03 wt%, said Mo and phosphorous in the ferritic stainless steel limiting oxidation to about 0.48 wt% after the oxidation resistant case is subjected to a temperature of 950°C for 20 hours in a moisture added atmosphere comprising 90 vol % of a mixture gas and a 10 vol % of water.

Support for the above novel characteristics and attributes of the oxidation resistance case, as set forth in claim 20 as amended herein, can be found on page 5, lines 9-15 of the specification. See also FIG. 4.

Each of the references cited by the Examiner is silent about an oxidation resistant case covering an outer surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel including Mo and phosphorous in order to provide oxidation resistance to the case at a temperature of 800°C or higher, said Mo content in the ferritic stainless steel is 1.20 wt% and said phosphorous content in the ferritic stainless steel being 0.03 wt%, said Mo and phosphorous in the ferritic stainless steel limiting oxidation to about 0.48 wt% after the oxidation resistant case is subjected to a temperature of 950°C for 20 hours in a moisture added atmosphere comprising 90 vol % of a mixture gas and a 10 vol % of water.

In page 7 and 8 of the Office Action, the Examiner incorrectly states that "...newly added limitations regarding the heating temperature, time, moisture added atmosphere and

oxidation increase as set forth in claims 15, 20, 25-27, 29, and 31 are directed to method of making which is of no patentable (weight) in apparatus claim since (it) has been held that the method of forming the device is not germane to the issue of patentability of the device itself". In response, the Applicants submit that the limitations referred to by the Examiner have nothing to do with a method of making the metal carrier of the present invention.

Instead, the Applicants respectfully submit that these limitations of claim 20 describe the attributes and characteristics of the claimed oxidation resistant case, and therefore should be given patentable weight.

Moreover, the Examiner has not established a *prima facie* case that one skilled in the art at the time the invention was made would find it obvious to combine the eight disparate references cited by the Examiner to teach the present invention as set forth in claim 15.

At least for the reasons above, the Applicants respectfully submit that no combination of the references cited by the Examiner teaches or suggests the novel combination of elements set forth in claim 20, including Whittenberger et al., Honma, Miyazaki et al., Uematsu et al., Arai et al., Bullock et al., Hitachi et al., Toyoda et al., and Maus.

Therefore, independent claim 20 is in condition for allowance.

The Examiner will note that dependent claims 32-34 are amended.

In view of above described amendments and arguments, it is respectfully submitted that the cited references, taken alone or in combination, fail to teach or suggest the novel combination of elements of the present invention. Accordingly, the rejection under 35 U.S.C. §103(a) has been overcome, and independent claims 1, 8, 15, and 20, as amended

herein, as well as the claims depending therefrom, are believed to be in condition for allowance. If the Examiner persists in his rejection of the claims, the Applicants reserve the right to file an Appeal to have this application considered by the Board of Patent Appeals and Interferences.

### CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

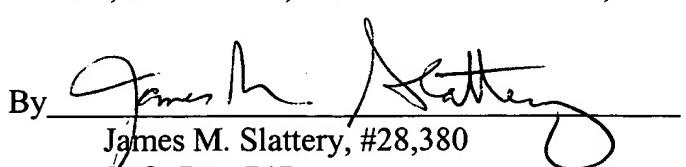
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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